

CLAIMS

1. A display apparatus which visibly displays a video image represented by an input video signal, in the state of being mounted on a predetermined portion of a user, comprising:

(A) video image displaying means for displaying the video image;

(B) video image display driving means for causing said video image displaying means to display the video image;

(C) optical system means for conducting the video image displayed by said video image displaying means to a pupil of the user;

(D) use time setting means for setting a use time, said use time setting means being capable of setting an arbitrary time; and

(E) informing means for measuring a continuous use time of said display apparatus and, immediately before an end of the use time set by said use time setting means, informing the user that the use time will end shortly, or, immediately after the end of the use time set by said use time setting means, informing the user that the use time has ended.

2. A display apparatus which visibly displays a video image represented by an input video signal, in the state of being mounted on a predetermined portion of a user, comprising:

(A) video image displaying means for displaying the video image;

(B) video image display driving means for causing said video image displaying means to display the video image;

(C) optical system means for conducting the video image displayed by said video image displaying means to a pupil of the user;

(D) use time setting means for setting a use time, said use time setting means being capable of setting an arbitrary time; and

(E) control means arranged to measure a continuous use time of said display apparatus and, immediately before an end of the use time set by said use time setting means, inform the user that the use time will end shortly, or, immediately after the end of the use time set by said use time setting means, inform the user that the use time has ended, and arranged to permit resetting for extending the use time set by said use time setting means according to a request of the user.

3. A display apparatus which visibly displays a video image represented by an input video signal, in the state of being mounted on a predetermined portion of a user, comprising:

(A) video image displaying means for displaying the video image;

(B) video image display driving means for causing said video image displaying means to display the video image;

(C) optical system means for conducting the video image displayed by said video image displaying means to a pupil of the user;

(D) use time setting means for setting a use time, said use time setting means being capable of setting an arbitrary time;

(E) use time indicating means for indicating a predetermined use time which is preset; and

(F) informing means for starting measurement of a continuous use time of said display apparatus when a power source thereof is turned on, and, immediately before an end of the predetermined use time indicated by said use time indicating means, informing the user that the use time will end shortly, or, immediately after the end of the predetermined use time indicated by said use time indicating means, informing the user that the use time has ended, said informing means, if the use time is set by said use time setting means after the power source of said display apparatus is turned on, informing the user that the use time will end shortly, immediately before an end of the use time set by said use time setting means, or informing the user that the use time has ended, immediately after the end of the use time set by said use time setting means.

4. A display apparatus which visibly displays a video image represented by an input video signal, in the state of being mounted on a predetermined portion of a user, comprising:

(A) video image displaying means for displaying the video image;

(B) video image display driving means for causing said video image displaying means to display the video image;

(C) optical system means for conducting the video image displayed by said video image displaying means to a pupil of the user;

(D) time measuring means for measuring time which elapses after a predetermined timing, and outputting an information signal relative to the measured time; and

(E) display operation control means for controlling a state of display of the video image in said video image displaying means according to a content represented by the information signal outputted from said time measuring means.

5. A display apparatus according to claim 4, wherein said time measuring means is arranged to measure time which elapses after a power source of said display apparatus is turned on, and output the information signal relative to the measured time.

6. A display apparatus according to claim 4, wherein said time measuring means is arranged to measure time which elapses after the display of the video image in said video image displaying means is started, and output the information signal relative to the measured time.

7. A display apparatus according to claim 4, wherein

said display operation control means is arranged to continue the display of the video image in said video image displaying means if the content represented by the information signal outputted from said time measuring means does not exceed a predetermined time, and stop the display of the video image in said video image displaying means if the content represented by the information signal outputted from said time measuring means exceeds the predetermined time.

8. A display apparatus according to claim 4, wherein said video image displaying means includes amount-of-light adjusting means for adjusting an amount of light of the displayed video image, and said display operation control means is arranged to control adjustment of the amount of light of the displayed video image by said amount-of-light adjusting means according to the content represented by the information signal outputted from said time measuring means.

9. A display apparatus according to claim 8, wherein said display operation control means is arranged to execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means is held at a predetermined level if the content represented by the information signal outputted from said time measuring means does not exceed a predetermined time, and, if the content represented by the information signal outputted from said time measuring means exceeds the predetermined time,

execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means gradually varies.

10. A display apparatus according to claim 8, wherein said display operation control means is arranged to execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means is held at a predetermined level if the content represented by the information signal outputted from said time measuring means does not exceed a predetermined time, and, if the content represented by the information signal outputted from said time measuring means exceeds the predetermined time, execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means gradually increases.

11. A display apparatus according to claim 8, wherein said display operation control means is arranged to execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means is held at a predetermined level if the content represented by the information signal outputted from said time measuring means does not exceed a predetermined time, and, if the content represented by the information signal outputted from said time measuring means exceeds the predetermined time, execute control so that the amount of light of the displayed video image adjusted by said amount-of-light adjusting means

gradually decreases.

12. A display apparatus according to claim 4, wherein said video image displaying means includes a liquid crystal display element for displaying the video image, a backlight source for illuminating a display portion of said liquid crystal display element from behind, and amount-of-light adjusting means for adjusting an amount of light of said backlight source, said display operation control means being arranged to control adjustment of the amount of light of said backlight source by said amount-of-light adjusting means according to the content represented by the information signal outputted from said time measuring means.

13. A display apparatus according to claim 4, wherein said optical system means includes an optical path for conducting a video image of an external scene to the pupil of the user and a combining optical system for combining the video image displayed by said video image displaying means and the video image of the external scene and conducting a combined video image to the pupil of the user, said display operation control means being arranged to control a combination ratio of the video image displayed by said video image displaying means to the video image of the external scene by controlling the state of display of the video image in said video image displaying means according to the content represented by the information signal outputted from said time measuring means.

14. A display apparatus which visibly displays a video image represented by an input video signal, in the state of being mounted on a predetermined portion of a user, comprising:

(A) video image displaying means having a plurality of different kinds of video image display modes, for displaying the video image in accordance with any of the video image display modes;

(B) video image display driving means for causing said video image displaying means to display the video image;

(C) optical system means for conducting the video image displayed by said video image displaying means to a pupil of the user;

(D) use time setting means for setting a use time, said use time setting means being capable of setting an arbitrary time; and

(E) display mode setting means for setting a video image display mode in said video image displaying means according to a state of lapse of the use time set by said use time setting means.

15. A display apparatus according to claim 14, wherein said video image displaying means has a two-dimensional video image display mode for two-dimensionally displaying the video image and a three-dimensional video image display mode for three-dimensionally displaying the video image, said display mode setting means being arranged to switch the video image display mode in said video image displaying

means between said two-dimensional video image display mode and said three-dimensional video image display mode according to the state of lapse of the use time set by said use time setting means.

16. A display apparatus according to claim 14, wherein said video image displaying means has a first video image display mode for displaying the video image in a first display size and a second video image display mode for displaying the video image in a second display size different from the first display size, said display mode setting means being arranged to switch the video image display mode in said video image displaying means between said first video image display mode and said second video image display mode according to the state of lapse of the use time set by said use time setting means.

17. A display apparatus according to claim 14, wherein said video image displaying means has a color video image display mode for displaying the video image in color and a monochrome video image display mode for monochromatically displaying the video image, said display mode setting means being arranged to switch the video image display mode in said video image displaying means between said color video image display mode and said monochrome video image display mode according to the state of lapse of the use time set by said use time setting means.

18. A display apparatus according to claim 14, wherein said video image displaying means has a first video image display mode for displaying a video image represented by a video signal supplied to said display apparatus from an outside and a second video image display mode for displaying a predetermined video image, said display mode setting means being arranged to switch the video image display mode in said video image displaying means between said first video image display mode and said second video image display mode according to the state of lapse of the use time set by said use time setting means.